Draft National Guidance: Best Management Practices for Preparing Vessels Intended to Create Artificial Reefs

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U.S. Environmental Protection Agency **U.S. Maritime Administration**

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- Department of Transportation's Maritime Administration
- National Oceanic and Atmospheric Administration
- United States Army Corps of Engineers
- United States Fish and Wildlife Service
- United States Coast Guard
- United States Department of the Navy
- United States Environmental Protection Agency

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EXECUTIVE SUMMARY

This guidance document was developed in response to the Maritime Administration's (MARAD) request for the U.S. Environmental Protection Agency (EPA) to provide national environmentally-based best management practices for the preparation of vessels to be sunk with the intention of creating artificial reefs in permitted artificial reef construction areas. It also satisfies the mandate of Section 3516 of the National Defense Authorization Act for Fiscal Year 2004, which requires that MARAD and EPA jointly develop guidance recommending environmental best management practices to be used in the preparation of vessels for use as artificial reefs.

Options for managing obsolete and decommissioned military and commercial vessels include re-use of the vessel or parts of the vessel, recycling or scrapping, creating artificial reefs, and disposal on land or at sea. This document discusses the preparation of vessels when employing the vessel management option of artificial reefing. Artificial reefs should be developed such that they enhance marine resources and benefit the marine environment. Strategically sited artificial reefs can not only enhance aquatic habitat, but also provide an additional option for conserving, managing, and/or developing fishery resources.

Although the best management practices presented in this document are intended for use when preparing vessels to serve as artificial reef habitat, the best management practices may have applicability to other in-water uses of vessels, such as the creation of recreational diving opportunities and placement as breakwaters or other types of barriers. It is recommended that these best management practices be implemented for all in-water uses of vessels, with the caveat that further vessel preparation beyond that employed for artificial reef habitat may be needed. When preparing a vessel for other permitted in-water uses, consideration should be given to vessel stability and integrity prior to and after final placement.

This guidance identifies materials or categories of materials of concern that may be found aboard vessels and specifically identifies where they may be found. For each material or category of material, this document provides a general clean-up performance goal and information on methods for achieving those goals in preparation of the vessel prior to sinking. Materials of concern include, but are not limited to: oil and fuel, asbestos, polychlorinated biphenyls (PCBs), paint, solids/debris/floatables, and other materials of environmental concern. Exhibit 1 provides a summary of the narrative clean-up goals for materials of concern.

This guidance does not substitute for any statute or regulation, nor is it a regulation itself. It does not impose legally binding requirements on any Federal agency, States, other regulatory authorities or the regulated community, and may not apply to a particular situation based upon the circumstances. Regulatory decision makers, both Federal and State, retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. EPA may change this guidance in the future.

Exhibit 1. Summary of Narrative Clean-up Goals for Materials of Concern

Material of Concern	Narrative Clean-up Goal
Oil And Fuel	Remove liquid hydrocarbons (fuels, oils) and semi-solids (greases) so that: no visible sheen is remaining on the tank surfaces (this includes all interior fittings, piping, structural members) or on the water surface when the equipment is flooded after sinking; no film or visible accumulation (i.e., spills on decking or rugs) is remaining on any vessel structure or component.
Asbestos	Remove any loose asbestos and asbestos that may become loose during vessel sinking; remove or seal accessible friable asbestos.
Polychlorinated Biphenyls (PCBs)	Remove all solid material containing PCBs greater than or equal to (≥) 50 parts per million (ppm) unless a disposal permit has been granted under 40 CFR 761.62(c); remove all liquid materials containing PCBs.
Paint	Remove harmful exterior hull antifouling systems that are determined to be active; remove exfoliating and exfoliated paint.
Solids/Debris/ Floatables	Remove loose debris, including materials or equipment that are not permanently attached to the vessel that could be transported into the water column during a sinking event.
Other Materials of Environmental Concern	Remove other materials that may negatively impact the biological, physical, or chemical characteristics of the marine environment.

There are statutory requirements and associated regulations, as well as permit processes applicable to the process of preparing a vessel for reefing that are not highlighted in this document. The narrative clean-up goals for the materials of concern highlighted in this guidance should be achieved while preparing a vessel for all in-water uses as earlier mentioned.

INTRODUCTION

Several options exist for managing obsolete and decommissioned military and commercial vessels. These options include re-use of the vessel or parts of the vessel, recycling or scrapping, creating artificial reefs, and disposal on land or at sea. This document discusses the vessel management option of artificial reefing. This guidance document was developed in response to the Maritime Administration's (MARAD) request for the U.S. Environmental Protection Agency (EPA) to assist in identifying potential management options for their decommissioned vessel fleet. It also satisfies the mandate of Section 3516 of the National Defense Authorization Act for Fiscal Year 2004, which requests that MARAD and EPA jointly develop guidance recommending environmental best management practices to be used in the preparation of vessels for use as artificial reefs.

An interagency workgroup, chaired by EPA, was established to develop national environmentally-based best management practices for the preparation of vessels to be sunk with the intention of creating artificial reefs in permitted artificial reef construction areas. The workgroup was comprised of representatives from the EPA, U.S. Coast Guard, U.S. Navy, MARAD, U.S. Army Corps of Engineers, National Oceanic and Atmospheric Administration, and the U.S. Fish and Wildlife Service.

Although these best management practices are intended for use when preparing vessels to serve as artificial reef habitat, such best management practices may have applicability to other in-water uses of vessels, such as the creation of recreational diving opportunities and placement as breakwaters or other types of barriers. The best management practices presented in this document should be implemented for all permitted in-water uses of vessels; further vessel preparation may be needed based on the intended in-water use, such as breakwaters.

Objectives of the Guidance Document

This guidance satisfies the mandate of Section 3516 of the National Defense Authorization Act for Fiscal Year 2004, which amends existing law to require that MARAD and EPA jointly develop guidance recommending environmental best management practices (BMPs) to be used in the preparation of vessels for use as artificial reefs. These BMPs are to serve as national guidance for Federal agencies for the preparation of vessels for use as artificial reefs. Section 3516 provides that the BMPs are to (1) ensure that vessels prepared for use as artificial reefs "will be environmentally sound in their use as artificial reefs"; (2) "promote consistent use of such practices nationwide"; (3) "provide a basis for estimating the costs associated with the preparation of vessels for use as artificial reefs"; and (4) include measures that will "enhance the utility of the Artificial Reefing Program of the Maritime Administration as an option for the disposal of obsolete vessels." Appendix A provides further detail on Section 3516, and below is a description on how this document addresses the four requirements of the statute.

- The use of this guidance will ensure that vessels prepared for use as artificial reefs "will be environmentally sound in their use as artificial reefs." Best management practices are provided through performance goals that are directed at the level of cleaning and/or removing materials of concern aboard vessels. The preparation of vessels in this manner

will ensure that their use as artificial reefs is environmentally sound. The purpose of creating an artificial reef is to benefit the environment by enhancing aquatic habitat and marine resources, as well as providing an additional option for conserving, managing, and/or developing fisheries resources. This document describes appropriate vessel preparation that could achieve such benefits as an artificial reef and avoid negatively impacting the environment with pollutants. The performance goals provided in this document, if implemented and complemented with strategic siting, will maximize the opportunity for these vessels to benefit the environment as artificial reefs.

- The use of this guidance document will "promote consistent use of such practices nationwide" and in turn will also provide measures that will "enhance the utility of the Artificial Reefing Program of the Maritime Administration as an option for the disposal of obsolete vessels." The best management practices described in this document will serve as national guidance for the preparation of vessels for use as artificial reefs. As the use of vessels as artificial reefs is becoming a more common management option for obsolete MARAD vessels, the development of this guidance document is timely. Currently, no guidance of this kind is available. The use of this guidance document can enhance the utility of MARAD's Artificial Reefing Program by establishing a national approach to clean and prepare candidate obsolete vessels, while also promoting consistent use of such practices for vessel-to-reef projects.

- The use of this document will "provide a basis for estimating the costs associated with the preparation of vessels for use as artificial reefs." Neither worker safety issues nor specific costs associated with clean-up procedures are discussed in this document; this document only addresses environmental impact and protection issues. Although the best management practices were developed independent of worker safety issues and specific costs associated with clean-up, the guidance in this document can be used as a tool in estimating the cost for appropriate vessel preparation. The methods, approach, and level of effort for clean-up, as well as worker safety concerns, are directly dependent on the vessel's condition and the amount of materials of environmental concern that are found aboard. Vessels that pose potential safety risks would be expensive to clean and therefore may not be good candidates for reefing.

  Some portions of a candidate vessel may be economically salvageable. Salvage operations should occur first, in a manner that will minimize debris and contamination with oils or other products that have to be cleaned up at a later date. This activity should allow for improved access for subsequent clean-up efforts, and the salvage proceeds may help offset the costs for vessel preparation.

Operations associated with salvage, clean-up, and diver access have the potential to adversely impact vessel stability. Failure to consider the impact of these activities on vessel stability before and during scuttling operations could result in premature and uncontrolled capsizing and/or sinking of the vessel. Therefore, vessel stability considerations should be an integral part of the salvage, clean-up, modification (for diver access), transport, and sinking plans of a ship to reef project.

In the process of preparing a vessel for reefing, there are requirements and regulations, as well as

permit processes, to consider that are not highlighted in this document. The final preparation plan for any particular artificial reef project is case specific, and will depend on the characteristics of the vessel and final permitted artificial reef construction site, as well as regulatory considerations. Some legal authorities that may apply to vessel-to-reef projects are briefly described in Appendix B.

This guidance identifies materials or categories of materials of concern that may be present aboard vessels, indicates where these materials may be found, and describes their potential adverse impacts if released into the marine environment (Appendix C provides related information). The materials of concern include, but are not limited to: fuels and oil, asbestos, polychlorinated biphenyls (PCBs), paints, debris (e.g., vessel debris, floatables, introduced material), and other materials of environmental concern (e.g., mercury, refrigerants). With the exception of materials containing PCBs, it is not within the purview of this document to discuss Federal, State, or local regulations, although those requirements that are directly applicable to vessel preparation must also be met prior to vessel sinking and placement. Because the best management practices described in this document are directed at the environmental concerns associated with using vessels as artificial reefs, other sources of information should also be used with regard to preparation of the vessel from a diver safety perspective or for any other potential in-water uses (e.g., breakwaters or other types of barriers).

A detailed description and characterization of the potential sources of contamination from a vessel intended for use as an artificial reef should be conducted and a plan developed. The purpose of this plan is to assure that materials potentially contributing to pollution of the marine environment are addressed. Appendix D of this document presents information regarding the development of workplans; Appendix E provides information regarding general principles for clean-up operations.

This guidance does not substitute for any statute or regulation, nor is it a regulation itself. It does not impose legally binding requirements on any Federal agency, States, other regulatory authorities or the regulated community, and may not apply to a particular situation based upon the circumstances. Regulatory decision makers, both Federal and State, retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. EPA may change this guidance in the future.

Organization of this Guidance Document

This document describes guidelines for the preparation of vessels in a manner that will ensure that the marine environment will benefit from their use as an artificial reef. Strategic siting is an essential component of a successful artificial reef project. Before the discussion of vessel preparation is presented, reef siting is briefly discussed.

For each material or category of material of concern identified above, this document provides a general performance goal and information on methods for addressing those goals in preparation of the vessel prior to sinking. Additional information for each material includes a description of its shipboard use and where it may be found on a vessel, as well as its expected impacts if released into the marine environment.

Although the best management practices presented in this document are intended for use when preparing a vessel to serve as artificial reef habitat, it is recommended that these best management practices be implemented for other in-water uses of vessels. Two such additional in-water uses include the sinking of vessels for recreational diving, and for placement as breakwaters or other types of barriers. These potential obsolete vessel management options are briefly described in this document.